

CLAIMS

1 1. A firewall for transferring message packets from an external network to a local area network, at least
2 one of the message packets including a time to live field including a time to live value, the firewall
3 comprising:

4 A. a message receiver configured to receive the at least one of the message packets from the external
5 network;

6 B. a message processor configured to process the at least one message packet to provide, in the time
7 to live field, a time to live value selected to be related to a maximum path length for message
8 packets transferred over the local area network; and

9 C. a message transmitter configured to transmit the at least one message packet as processed by the
10 message processor over the local area network.

11 2. A firewall as defined in claim 1 in which the firewall selectively transfers message packets from the
12 external network to the local area network.

13 3. A firewall as defined in claim 2 in which the selection is made for a respective message packet based
14 on whether a source for the respective message packet in the external network is authorized to transmit a
15 message packet to a destination in the local area network.

1 4. A firewaall as defined in claim 1, the firewall further transferring message packets from the local area
2 network to the external network, at least one of the message packets including a time to live field including
3 a time to live value,

4 A. the message receiver being further configured to receive the at least one of the message packets
5 from the local area network;

6 B. the message processor being further configured to process the at least one of the message packets
7 received from the local area network to provide, in the time to live field, a predetermined arbitrary
8 value; and

9 C. the message transmitter being further configured to transmit the at least one of the message packets
10 as processed by the message processor over the external network.

11 5. A firewall as defined in claim 4 in which the firewall selectively transfers message packets from the local
12 area network to the external network.

13 6. A firewall as defined in claim 5 in which the selection is made for a respective message packet based
14 on whether a source for the respective message packet in the local area network is authorized to transmit
15 a message packet to a destination in the external network.

1 7. A device for generating and transmitting at least one message packet over network, the at least one
2 message packet including a time to live field including a time to live value, the device comprising:

- 3 A. a message generator configured to generate the at least one message packet and provide, in the
4 time to live field, a time to live value selected to be related to a maximum path length for message
5 packets transferred over the network; and
- 6 B. a message transmitter configured to transmit the at least one message packet as generated by the
7 message generator over the network.

1 8. A method of transferring message packets from an external network to a local area network, at least one
2 of the message packets including a time to live field including a time to live value, the method comprising
3 the steps of:

- 4 A. receiving the at least one of the message packets from the external network;
- 5 B. processing the at least one message packet to provide, in the time to live field, a time to live value
6 selected to be related to a maximum path length for message packets transferred over the local
7 area network; and
- 8 C. transmitting the at least one message packet as processed over the local area network.

1 9. A method as defined in claim 8 in which message packets are transferred from the external network to
2 the local area network.

1 10. A method as defined in claim 9 in which the selection is made for a respective message packet based
2 on whether a source for the respective message packet in the external network is authorized to transmit a
3 message packet to a destination in the local area network.

1 11. A method as defined in claim 8 of further transferring message packets from the local area network to
2 the external network, at least one of the message packets including a time to live field including a time to
3 live value, the method further including the steps of

- 4 A. receiving the at least one of the message packets from the local area network;
- 5 B. processing the at least one of the message packets received from the local area network to
6 provide, in the time to live field, a predetermined arbitrary value; and
- 7 C. transmitting the at least one of the message packets as processed over the external network.

10 12. A method as defined in claim 11 in which message packets are transferred from the local area network
20 to the external network.

10 13. A method as defined in claim 12 in which the selection is made for a respective message packet based
20 on whether a source for the respective message packet in the local area network is authorized to transmit
30 a message packet to a destination in the external network.

1 14. A method of generating and transmitting at least one message packet over network, the at least one
2 message packet including a time to live field including a time to live value, the device comprising:

- 3 A. generating the at least one message packet and provide, in the time to live field, a time to live value
4 selected to be related to a maximum path length for message packets transferred over the network;
5 and

6 B. transmitting the at least one message packet as generated by the message generator over the
7 network.

1 15. A computer program product for use in connection with a computer to provide a firewall for
2 transferring message packets from an external network to a local area network, at least one of the message
3 packets including a time to live field including a time to live value, the computer program product comprising
4 a computer-readable medium having encoded thereon a message processor module configured to enable
5 the computer process the at least one message packet to provide, in the time to live field, a time to live
6 value selected to be related to a maximum path length for message packets transferred over the local area
7 network.

1 16. A computer program product as defined in claim 15, the firewall further transferring message packets
2 from the local area network to the external network, at least one of the message packets including a time
3 to live field including a time to live value, the message processor module being further configured to process
4 the at least one of the message packets received from the local area network to provide, in the time to live
5 field, a predetermined arbitrary value.

1 17. A computer program product for use in connection with a computer to provide a device for generating
2 and transmitting at least one message packet over network, the at least one message packet including a time
3 to live field including a time to live value, the computer program product comprising a computer-readable
4 medium having encoded thereon a message generator configured to generate the at least one message
5 packet and provide, in the time to live field, a time to live value selected to be related to a maximum path
6 length for message packets transferred over the network.